

**Jetstream 31 (J31) Flight Report for INTEX-B/MILAGRO**  
**Flight VER10 flown 15 Mar 2006**

A complete version of this report is posted at  
<http://www.espo.nasa.gov/intex-b/flightplanningJ31.cgi>

Overview

Preflight goals focused on characterizing urban albedo and aerosols over Mexico City.  
See planned and actual flight tracks in Figures 1 and 2.

Engine on: 1525 UT

Engine off: 1921 UT

Takeoff: 1548 UT

Land: 1917 UT

1709 UT Terra overpass

Cabin crew: Arnold, Cairns (flight scientist), Kahn, Livingston, Schmidt, Waquet

Pilot Summary

Went fairly well. MC extremely busy. Initial questions from flight controllers re canned plan. Need printouts of canned plans in cockpit. Recommend we email vertical cross section cartoon w heights of maneuvers, just for MC.

Near pt 5, Mexicana A/C appeared to have to avoid J31. Recommend J31 get TCAS for future missions. TCAS also aids in coordinating flights with other mission A/C.

Coordination with King Air was excellent.

Discussion of flight

Flight Scientist: Flew transit above broken cumulus over coastal plain. Clear above, got principal plane data for RSP. Clear at point REXES and til 20 mi from MC—then patchy cirrus. Smoke plume to N—separate from MC, J31 at 16 kft.

Arrived MC T0 2 min ahead of planned time. Held for 5 min by ATC. Patchy cirrus. Too much cirrus for good AOD profile. ATC holds at several altitudes. Min alt 9.5 kft. RSP triangle stayed S of Santa Lucia airspace. Albedo may be marginal. Low alt leg to pt 5. Terrain increases up to 8200', J31 climbed, too. Pt 5 terrain too rough to descend for AATS spiral. Came up for CAR orbit at 9500 ft—2 orbits. Terminated because too much cirrus. Then profile up, 3.1 km to 5.25 km cirrus-free for AATS. Largest AOD ~0.12. Leg back over low leg to T0, 16.5 kft. Put in hold for 2 min. Then NW to pt 8 for rendezvous w King Air. Ascended to be above aerosol. Ended 6.45 km. W-E leg excellent coord w King Air—really good data, cirrus-free. Direct return home, mostly cirrus-free, few thin ci near Veracruz. Good RSP data. Headed for nice stratus deck over ocean, out 19 nmi, descended over cloud deck & then landed. Start 9.5kft, down to 8.8 kft, clear layer, another cloud layer between 8 and 7.2. AATS parked before entering cloud. Little AOD above cloud.

Good surface polarized reflectance in MC—good for color in spite of cirrus. Excellent RSP data in transit legs on aerosols below J31.

Coordination with King Air excellent. Pilots adjusted speeds to get desired timing over T0.

Coordination on E-W leg also excellent.

Transect started W of plume, went across plume to E, ended up at 20 kft, 6.45 km.

#### Instrument Performance & Status

AATS: Performed fine. Mother nature didn't.

CAR: Performed fine.

RSP: Worked fine. Switched heaters off end of flight—was getting a bit warm.

SSFR: Worked well. Albedo-wise, probably didn't get at T0, maybe 3-5 and 7-8.

POS: Performed fine. NavMet data look good. Does POS need to be stationary for a few minutes before shutdown?

NavMet: Fine.

#### Flight Path, Timing, and Measurements (all times UT [VER local +6])

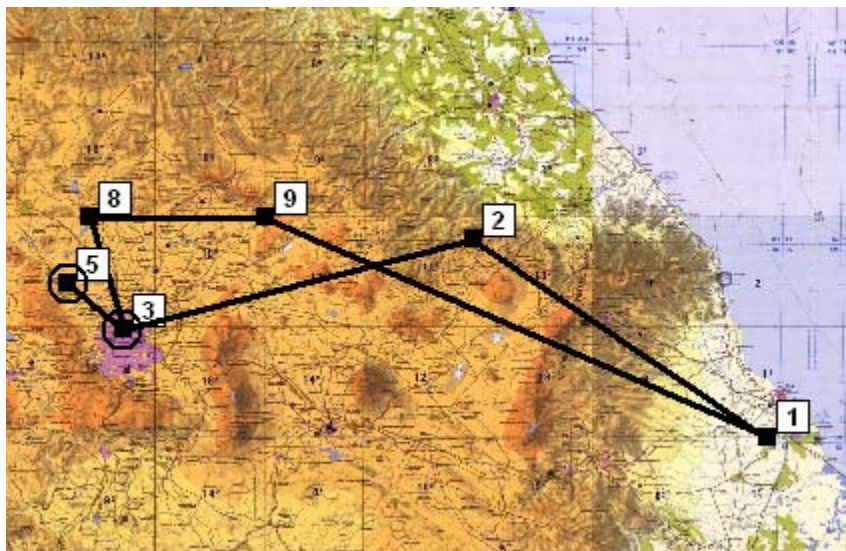


Figure 1. Planned flight track, J31 Flight VER10, 15 March 2006.

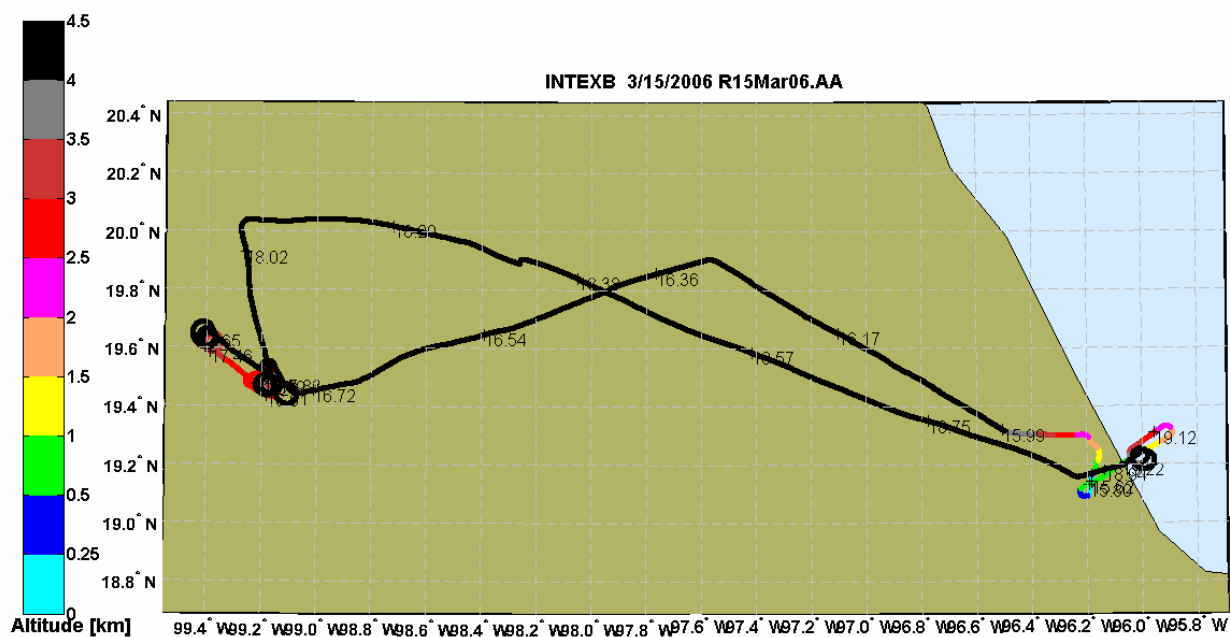


Figure 2. Actual flight track, J31 Flight VER10, flown 15 March 2006.

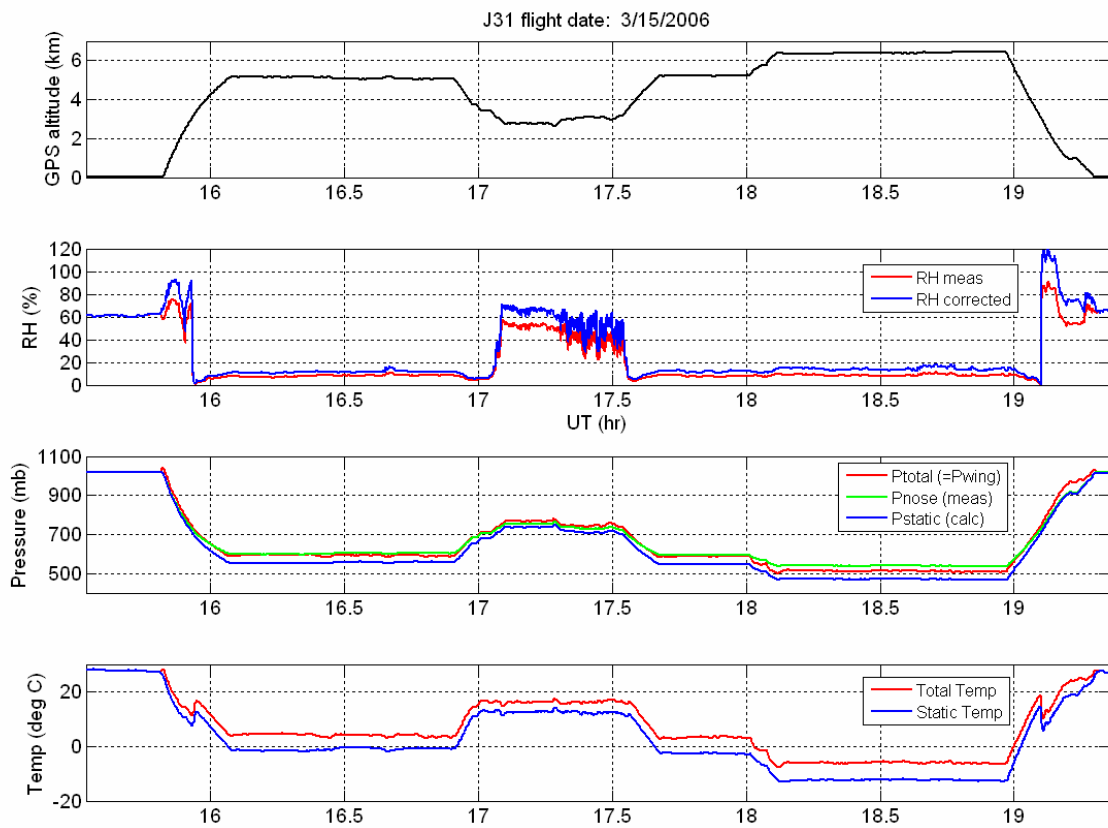


Figure 3. NavMet data, J31 Flight VER10, 15 March 2006.